

Transitional Alternative Fuel Vehicle Model (TAFV)

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What is TAFV?

- EE/PO Jointly-funded Model
- Projects Use & Costs of Alternative Fuels & Alternative Fuel Vehicles (AFVs) over the 1996 to 2010 Time Horizon
- Designed to Examine Transition Period
 - ◆ Low-volume, High-Cost AFV World
 - ◆ High-volume, Low-Cost AFV World
- Helps to Examine Necessary Conditions of Transition

Why is TAFV Important to OTT

- Will Provide Critical Input into OTT EPACT-related Activities:
 - ◆ Sec 507 Private Fleet Rule
 - ◆ 10/30 Replacement Fuel Goal Evaluation
 - ◆ Evaluate Current Incentives vs. Mandates Debate
 - ◆ Input to Fleet Forums
 - ◆ Evaluate Legislative/Policy Proposals

TAFV Issues

- Results Timetable
- Sectors Modeled
- Model Overview
- Model Outputs
- Geographic Area of Coverage
- Model Premises/Assumptions
- Base Cases/Policy Cases
- Sensitivities - Input/Output Topographies
- Conclusions

TAFV Results Timetable

- Draft Scenario Document 2/15
- Draft Report 4/30
- Model Documentation 4/30
- Benchmarked Model 1.0 & Base Cases 4/30
- Policy Cases and Sensitivity Cases 6/30
- Draft Report on Policy and Base Cases 8/15
- Progress Report on Model Revisions to Version 2.0 9/30

Sectors Modeled

- Consumer/fleet vehicle demand & choice
- Consumer and fleet fuel choice and use
- Retail fuel supply and availability
- Vehicle production
- Motor fuel production
- Raw material (retail fuel feedstock) supply.

TAFV Model Outputs

■ Flows

- ◆ New Vehicle purchases by type
- ◆ Fuel use by vehicles
- ◆ Fuel mix choice for FFVs/Dual fuel vehicles
- ◆ Gasoline displaced
- ◆ GHG Emissions by fuel type

TAFV Model Outputs (cont.)

■ Stocks

- ◆ Vehicle stocks, by vehicle age and type
- ◆ Degree of model diversity for each vehicle type
- ◆ Retail Capacity by fuel
- ◆ Retail availability by fuel (distinct from fuel demand share)

TAFV Model Outputs (cont.)

■ Prices

- ◆ Plant gate prices of methanol and ethanol
- ◆ Retail fuel prices
- ◆ Retail fuel taxes
- ◆ Effective cost of limited retail fuel availability
- ◆ Marginal cost of vehicle production
- ◆ Full price to consumer for vehicles
- ◆ Effective cost of non-price attributes

TAFV Geographic Areas of Coverage

- National Model
- Input Data and Results Represent National Averages
- Will Differentiate between Gasoline and RFG “Pseudo Regions”
- Regional Differences Require Re-Parameterization
- Canadian Region w/ Additional Resources

Model Premises/Assumptions

- Technology & Conversion
 - ◆ Market Equilibrium based on Underlying Cost Functions
- Wholesale Fuel Production
 - ◆ Ethanol Corn and Biomass Supply Curves
 - ◆ Methanol from Chem Systems Study
 - ◆ Others from AEO96
- Motor Fuel Transportation, Distribution & Markup
 - ◆ EA & EST and EEA Estimates
- Vehicle Data (Variety of Sources)
- Emissions (DeLucci 1991, Tech. Report 14)
- Vehicle Production Cost (EEA)

Base Cases to be Examined

■ Base Case

- ◆ AEO96; No Private Fleet Mandate

■ Base Case Favorable

- ◆ AEO96 High Oil Price; Private Fleet Mandate Implemented

■ Base Case - Price Shock

- ◆ AEO96 w/ Oil Price Shock; No Private Fleet Mandate

Policy Cases to be Examined

- Barton Bill
- Alternative Fuel Tax Incentives
- Increased CAFE Standards
- Vehicle Supplier Sales Mandate
- Retail Alt Fuel Sales Requirement
- Low-GHG Fuel Subsidy

Sensitivities

- Retail fuel availability costs to consumers
- Cost of supplying vehicle diversity
- Relative cost of fuels (alternative fuels to gasoline and alternative fuels relative to each other)
- Relative costs of alternative fuel vehicles
- Price of gasoline
- Commercial vs. central refueling of fleets
- Low and high reformulated gasoline penetration scenarios

Conclusions - TAFV is Important to OTT

- Will Provide Critical Input into OTT EPACT-related Activities:
 - ◆ Sec 507 Private Fleet Rule
 - ◆ 10/30 Replacement Fuel Goal Evaluation
 - ◆ Evaluate Current Incentives vs. Mandates Debate
 - ◆ Input to Fleet Forums
 - ◆ Evaluate Legislative/Policy Proposals
- OTU Would Like to Hear from other OTT-elements on how to Improve Model